

# Purchasing Receipts

PO No	Supplier	Line Item No	Rel No	Terms	Purchased Item	Description	For Part No	Project	Equipment ID	Order Qty	Due Date	Received Quantity	Accounting Job No	Serial No	Status	Receive Date	Price/Unit	Aging Days	P C
PO039038	TWM001-VU	1	1	Net 30	M304TR0.750W.049	304 Round Tube .750 X .049W : MATERIAL: AISI 304/316 SS SEAMLESS ROUND TUBING AS PER ASTM A213 OR ASME SA213 OR ASTM A269 receive ft				120	2/23/2018	120		S044568	Stock	2/22/2018	\$ 2.10 / ft	0	
		2			M6061T6T1.000W.188	6061T6 Round Tube 1.00 X .188W : MATERIAL: 6061-T6/T62/T6510/T6511 SEAMLESS TUBING AS PER WW-T-700/8 OR QQ-A-200/8 OR QQ-A-225/8 OR AMS 4080 OR AMS 4082 OR AMS 4083 OR ASTM B210 OR ASTM B241 receive ft				24		24		S044568	Stock	2/22/2018	\$ 6.75 / ft	0	
		3			M6061T6T5.000W.125	6061-T6 Tube 5.00 X .125W : MATERIAL: 6061-T6/T62/T6510/T6511 SEAMLESS TUBING AS PER WW-T-700/8 OR QQ-A-200/8 OR QQ-A-225/8 OR AMS 4080 OR AMS 4082 OR AMS 4083 OR ASTM B210 OR ASTM B241 receive ft				12		12		S044570	Stock	2/22/2018	\$ 10.00 / ft	0	
		4			M6061T6T0.625W.065	6061-T6 Round Tube .625 X .065W : MATERIAL: 6061-T6/T62/T6510/T6511 SEAMLESS TUBING AS PER WW-T-700/8 OR QQ-A-200/8 OR QQ-A-225/8 OR AMS 4080 OR AMS 4082 OR AMS 4083 OR ASTM B210 OR ASTM B241 receive ft				96		96		S044571	Stock	2/22/2018	\$ 3.15 / ft	0	
		5			M6061T6T2.00W.125	6061T6 Round Tube 2.00 X .125W : MATERIAL: 6061-T6/T62/T6510/T6511 SEAMLESS TUBING AS PER WW-T-700/8 OR QQ-A-200/8 OR QQ-A-225/8 OR AMS 4080 OR AMS 4082 OR AMS 4083 OR ASTM B210 OR ASTM B241 receive ft				12		12		S044572	Stock	2/22/2018	\$ 8.50 / ft	0	
		6			M4130NT0.750W.049	4130 Round Tube .750 X .049W : MATERIAL: AISI 4130N STEEL TUBING AS PER MIL-T-6736 OR AMS 6371/6360/6361/6362 6373/6374 receive ft				20		24		S044573	Stock	2/22/2018	\$ 6.00 / ft	0	
		7			M6061T6T0.500W.058	6061-T6 Round Tube .500 X .058W : MATERIAL: 6061-T6/T62/T6510/T6511 SEAMLESS TUBING AS PER WW-T-700/8 OR QQ-A-200/8 OR QQ-A-225/8 OR AMS 4080 OR AMS 4082 OR AMS 4083 OR ASTM B210 OR ASTM B241 receive ft				60		60		S044574	Stock	2/22/2018	\$ 1.75 / ft	0	
Total:										344		348							



O'Neal High-Performance Metals Group

Customer		DART AEROSPACE LTD
PO Number		PO039038
TW Order Number		60650079
Customer Number		1203820

### Order Documentation:

- Packing List
- Material Test Report



O'Neal High-Performance Metals Group



**Packing Slip**

ORDER NO.: 60650079 FROM: CRAN PAGE 1

CUST NUMBER: 1203820 NET WGT: 81.704 REQ.DATE: 02/23/18 CONFIRMED  
 SOLD TO: SHIP TO:  
 DART AEROSPACE LTD DART AEROSPACE LTD  
 1270 ABERDEEN ST 1270 ABERDEEN ST  
 HAWKESBURY ON HAWKESBURY ON  
 CANADA ONTARIO CANADA  
 CN K6A 1K7 CN K6A 1K7

SALESPERSON: DONNA SMALLEY  
 TERMS: NET 30 DAYS  
 F.O.B.: SHIPPING POINT  
 CUST ORD NO.: PO039038  
 SHIP BY: 02/16/18  
 VIA: COMMON CARRIER  
 FREIGHT: PREPAID  
 RELEASE NO.:  
 RECEIVING PHONE:

LINE ITEM DESCRIPTION WIDTH LENGTH  
 0001 36860 SMLS CD 304/L A269 3/4 OD X .049 WA 20' CL

CLN#	ORD QTY	INVOICE QTY	SHIPPED QTY	WT	PCS
	120.000 FT	120.000 FT	120.000 FT	44.006	

\*\* 1 TEST REPORTS REQUIRED \*\*  
 \*\* 1 CERTS REQUIRED \*\*

ECCN: 2B999.g Export License: NLR Expiration Date: 0/00/00  
 PO:49339141 HT:YX1508708 PC: 6 CUSTOMER QTY: UOM  
 MLT:CHINA MFG:CHINA SLB/CL:2-115

0002 42558 D6061-T6 5/8 OD X .065 WA 12 FT ML

CLN#	ORD QTY	INVOICE QTY	SHIPPED QTY	WT	PCS
	96.000 FT	96.000 FT	96.000 FT	12.856	

\*\* 1 TEST REPORTS REQUIRED \*\*  
 \*\* 1 CERTS REQUIRED \*\*

ECCN: EAR99 Export License: NLR Expiration Date: 0/00/00  
 PO:49372137 HT:FQ02459070001 PC: 8 CUSTOMER QTY: UOM  
 MLT:UNITED STATES MFG:UNITED STATES SLB/CL:223623

0003 44622 D6061-T6 2 OD X .125 WA 12 FT ML

CLN#	ORD QTY	INVOICE QTY	SHIPPED QTY	WT	PCS
	12.000 FT	12.000 FT	12.000 FT	10.390	

\*\* 1 TEST REPORTS REQUIRED \*\*  
 \*\* 1 CERTS REQUIRED \*\*

ECCN: EAR99 Export License: NLR Expiration Date: 0/00/00  
 PO:49371766 HT:1403313 PC: 1 CUSTOMER QTY: UOM  
 MLT:GERMANY MFG:GERMANY SLB/CL:65598/100

**THANK YOU FOR THIS ORDER**

TERMS AND CONDITIONS APPLICABLE TO THE SALE OF THESE  
 PRODUCTS ARE SET FORTH ON OUR WEBSITE FOR YOUR CAREFUL  
 REVIEW.  
<http://www.twmetals.com/invoice-terms.html>



O'Neal High-Performance Metals Group



**Packing  
Slip**

ORDER NO.: 60650079

FROM: CRAN

PAGE 2

CUST NUMBER: 1203820 NET WGT: 81.704 REQ.DATE: 02/23/18 CONFIRMED  
SOLD TO: SHIP TO:  
DART AEROSPACE LTD DART AEROSPACE LTD  
1270 ABERDEEN ST 1270 ABERDEEN ST  
HAWKESBURY ON HAWKESBURY ON  
CANADA ONTARIO CANADA  
CN K6A 1K7 CN K6A 1K7

SALESPERSON: DONNA SMALLEY SHIP BY: 02/16/18  
TERMS: NET 30 DAYS VIA: COMMON CARRIER  
F.O.B.: SHIPPING POINT FREIGHT: PREPAID  
CUST ORD NO.: P0039038 RELEASE NO.:  
RECEIVING PHONE:

LINE ITEM DESCRIPTION WIDTH LENGTH  
0004 33047 CDS 4130 6736 3/4 X .049 17/24 FT

CLN#	ORD QTY	INVOICE QTY	SHIPPED QTY	WT	PCS
	20.000 FT	23.917 FT	23.917 FT	8.771	

\*\* 1 TEST REPORTS REQUIRED \*\*  
\*\* 1 CERTS REQUIRED \*\*

ECCN: 9A991.d Export License: NLR Expiration Date: 0/00/00  
PO:49368990 HT:602196 PC: 1 CUSTOMER QTY: UOM  
MLT:GERMANY MFG:GERMANY SLB/CL:1637185

0005 42276 D6061-T6 1/2 OD X .058 WA 12 FT ML

CLN#	ORD QTY	INVOICE QTY	SHIPPED QTY	WT	PCS
	60.000 FT	60.000 FT	60.000 FT	5.681	

\*\* 1 TEST REPORTS REQUIRED \*\*  
\*\* 1 CERTS REQUIRED \*\*

ECCN: EAR99 Export License: NLR Expiration Date: 0/00/00  
PO:49378297 HT:F002542390002 PC: 5 CUSTOMER QTY: UOM  
MLT:UNITED STATES MFG:UNITED STATES SLB/CL:224471

BROKERS KUEHNE AND NAGEL LTD

AREA	TYPE OF PKG	PKGS	GRS WEIGHT	WIDTH	LENGTH	HGHT
NEW PEN CARTON		1.000	77.776	3.0000	293.0000	3
Orders In Package - 1		Box No -	TWPK18003366			
NEW PEN CARTON		1.000	38.927	4.0000	150.0000	4
Orders In Package - 1		Box No -	TWPK18003367			
		2.000	116.703			

BY: Tom Weaver

**THANK YOU FOR THIS ORDER**

TERMS AND CONDITIONS APPLICABLE TO THE SALE OF THESE  
PRODUCTS ARE SET FORTH ON OUR WEBSITE FOR YOUR CAREFUL  
REVIEW.  
<http://www.twmetals.com/invoice-terms.html>



O'Neal High-Performance Metals Group



# Packing Slip

ORDER NO.: 60650079

FROM: CRAN

PAGE 3

CUST NUMBER: 1203820  
SOLD TO:  
DART AEROSPACE LTD  
1270 ABERDEEN ST  
HAWKESBURY ON  
CANADA

NET WGT:

81.704 REQ.DATE: 02/23/18 CONFIRMED  
SHIP TO:  
DART AEROSPACE LTD  
1270 ABERDEEN ST  
HAWKSBURY ON  
ONTARIO CANADA

CN K6A 1K7

CN K6A 1K7

SALESPERSON: DONNA SMALLEY  
TERMS: NET 30 DAYS  
F.O.B.: SHIPPING POINT  
CUST ORD NO.: PO039038

SHIP BY: 02/16/18  
VIA: COMMON CARRIER  
FREIGHT: PREPAID  
RELEASE NO.:  
RECEIVING PHONE:  
WIDTH LENGTH  
UNLOAD TYPE: NONE SPECIFIED

LINE ITEM DESCRIPTION  
RT 000-

DATE SHIPPED \_\_\_\_\_

DATE FILLED \_\_\_\_\_

**THANK YOU FOR THIS ORDER**

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PRODUCTS ARE SET FORTH ON OUR WEBSITE FOR YOUR CAREFUL  
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O'Neal High-Performance Metals Group



**Packing  
Slip**

ORDER NO.: 60650079

FROM: CRAN

PAGE 4

CUST NUMBER: 1203820	NET WGT: 81.704	REQ.DATE: 02/23/18	CONFIRMED
SOLD TO:	SHIP TO:		
DART AEROSPACE LTD	DART AEROSPACE LTD		
1270 ABERDEEN ST	1270 ABERDEEN ST		
HAWKESBURY ON	HAWKESBURY ON		
CANADA	CN K6A 1K7	ONTARIO CANADA	CN K6A 1K7

SALESPERSON:	DONNA SMALLEY	SHIP BY:	02/16/18
TERMS:	NET 30 DAYS	27 ENGLEHARD DRIVE	
F.O.B.:	SHIPPING POINT	MONROE TWP	NJ 08831
CUST ORD NO.:	PO039038		
VIA:	COMMON CARRIER		
FREIGHT:	PREPAID		
RELEASE NO.:			
RECEIVING PHONE:			

"TW Metals MSDS data is available on our web site at [www.twmetals.com](http://www.twmetals.com). MSDS data can be found under the Technical Resources Tab, Product Statistics & Data and the TW Metals MSDS's heading. If you do not have web site access you may telephone 610-458-1300 and we will mail or fax a copy of our current MSDS data to your location."

**"CERTIFICATE OF CONFORMANCE"**

"TW Metals certifies that the material supplied on this purchase order and contained in the heat/lot number referenced above has been manufactured, inspected, and tested in accordance with the material specification. These records are on file at TW Metals. Packaging material for shipments to Europe and China consists of manufactured wood products and complies with the European emergency measures for coniferous non-manufactured wood packing material"

Electronically Generated Certificate-Valid without signature Date: 2/15/18

These commodities have been exported from the United States in accordance with the U.S. export control laws, export administrations regulations. Diversion contrary to U.S. law prohibited.

**THANK YOU FOR THIS ORDER**

TERMS AND CONDITIONS APPLICABLE TO THE SALE OF THESE PRODUCTS ARE SET FORTH ON OUR WEBSITE FOR YOUR CAREFUL REVIEW.  
<http://www.twmetals.com/invoice-terms.html>



10404-0 GRANITE STREET  
 CHARLOTTE NC 28273  
 Tel: 800-203-8000  
 FAX: 704 588 4116

Invoice#: 20191979  
 Cust. PO#: PO039038  
 Incoterms: SHIPPING POINT  
 Frt. Terms: PREPAID  
 Ship Via: COMMON CARRIER

### COMMERCIAL INVOICE

<b>Sold To:</b> DART AEROSPACE LTD 1270 ABERDEEN ST HAWKESBURY ON CANADA CN K6A 1K7 C  <b>Contact:</b> CHANTAL 16136321053	<b>Invoice Date:</b> 2/16/18
	<b>Ship Date:</b> 2/16/18
	<b>Payment Terms:</b> NET 30 DAYS
	<b>Ship To/Final Destination:</b>  DART AEROSPACE LTD 1270 ABERDEEN ST HAWKESBURY ON ONTARIO CANADA CN K6A 1K7
<b>Freight Forwarder/Intermediate Ship To:</b>	

ITEM# / LINE#	DESCRIPTION	QUANTITY	UNIT VALUE	SUBTOTAL
45542	E6061-T6511 B241 5 OD X .125	12.000 FT	\$ 10.0000 FT	\$ 120.00
1	ALUMINUM TUBE ROUND	0 IN		
		1.000 PC		
	PART NUMBER:			
	ECCN: EAR99			
	SCHEDULE B:7608.20.0030			
	ALUM PIPE/TUBE - SEAMLESS			
	NET WGT: 27.012 LBS			
	COUNTRY OF MFG: UNITED STATES			
	QUANTITY AND TYPE OF BOXES:			
	1 REDDICRATE			
	150.0000 X 6.0000 X 6.0000			
	TOTAL WGT: 27.012 LBS			
	GROSS WGT: 35.000 LBS			
<p align="center"><b>EXPORT LICENSE NUMBER: NLR</b>  <b>EXPIRATION DATE: 00/00/00</b></p>				
<p>TW METALS, INC CERTIFIES THAT THE COUNTRY OR COUNTRIES OF MANUFACTURE INDICATED ABOVE IS TRUE AND CORRECT AS CONTAINED IN THE RECORDS OF TW METALS, INC.</p> <p>THESE ITEMS ARE CONTROLLED BY THE U.S. GOVERNMENT AND AUTHORIZED FOR EXPORT ONLY TO THE COUNTRY OF ULTIMATE DESTINATION FOR USE BY THE ULTIMATE CONSIGNEE OR END-USER(S) HEREIN IDENTIFIED. THEY MAY NOT BE RESOLD, TRANSFERRED, OR OTHERWISE DISPOSED OF, TO ANY OTHER COUNTRY OR TO ANY PERSON OTHER THAN THE AUTHORIZED ULTIMATE CONSIGNEE OR END-USER(S), EITHER IN THEIR ORIGINAL FORM OR AFTER BEING INCORPORATED INTO OTHER ITEMS, WITHOUT FIRST OBTAINING APPROVAL FROM THE U.S. GOVERNMENT OR AS OTHERWISE AUTHORIZED BY U.S. LAW AND REGULATIONS.</p>				<p align="right">Sales Tax .00</p> <p align="right">Payable in US Dollars 120.00</p>
Page 1				





10404-0 GRANITE STREET  
CHARLOTTE NC 28273  
Tel: 800-203-8000  
FAX: 704 588 4116

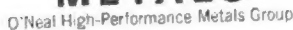
Invoice#: 20191979  
Cust. PO#: PO039038  
Incoterms: SHIPPING POINT  
Frt. Terms: PREPAID  
Ship Via: COMMON CARRIER

### COMMERCIAL INVOICE

<b>Sold To:</b> DART AEROSPACE LTD 1270 ABERDEEN ST HAWKESBURY ON CANADA CN K6A 1K7 C  <b>Contact:</b> CHANTAL 16136321053		<b>Invoice Date:</b> 2/16/18
<b>Freight Forwarder/Intermediate Ship To:</b>		<b>Ship Date:</b> 2/16/18
		<b>Payment Terms:</b> NET 30 DAYS
		<b>Ship To/Final Destination:</b> DART AEROSPACE LTD 1270 ABERDEEN ST HAWKESBURY ON ONTARIO CANADA CN K6A 1K7

ITEM#/LINE#	DESCRIPTION	QUANTITY	UNIT	VALUE	SUBTOTAL
45542	E6061-T6511 B241 5 OD X .125	12.000	FT	\$ 10.0000	\$ 120.00
1	ALUMINUM TUBE ROUND	1.000	IN		
	PART NUMBER:		PC		
	ECCN: EAR99				
	SCHEDULE B:7608.20.0030				
	ALUM PIPE/TUBE - SEAMLESS				
	NET WGT: 27.012 LBS				
	COUNTRY OF MFG: UNITED STATES				
	QUANTITY AND TYPE OF BOXES:				
	1 REDDICRATE				
	150.0000 X 6.0000 X 6.0000				
	TOTAL WGT: 27.012 LBS				
	GROSS WGT: 35.000 LBS				
EXPORT LICENSE NUMBER: NLR					
EXPIRATION DATE: 00/00/00					
TW METALS, INC CERTIFIES THAT THE COUNTRY OR COUNTRIES OF MANUFACTURE INDICATED ABOVE IS TRUE AND CORRECT AS CONTAINED IN THE RECORDS OF TW METALS, INC.					
THESE ITEMS ARE CONTROLLED BY THE U.S. GOVERNMENT AND AUTHORIZED FOR EXPORT ONLY TO THE COUNTRY OF ULTIMATE DESTINATION FOR USE BY THE ULTIMATE CONSIGNEE OR END-USER(S) HEREIN IDENTIFIED. THEY MAY NOT BE RESOLD, TRANSFERRED, OR OTHERWISE DISPOSED OF, TO ANY OTHER COUNTRY OR TO ANY PERSON OTHER THAN THE AUTHORIZED ULTIMATE CONSIGNEE OR END-USER(S), EITHER IN THEIR ORIGINAL FORM OR AFTER BEING INCORPORATED INTO OTHER ITEMS, WITHOUT FIRST OBTAINING APPROVAL FROM THE U.S. GOVERNMENT OR AS OTHERWISE AUTHORIZED BY U.S. LAW AND REGULATIONS.					
Sales Tax				.0.	
Payable in US Dollars					120.00
Page 1					





FROM: CHLT

PAGE 2

CN K6A 1K7

27.012 REQ.DATE: 02/23/18 CONFIRMED  
SHIP TO:  
DART AEROSPACE LTD  
1270 ABERDEEN ST  
HAWKSURRY ON  
ONTARIO CANADA  
CN K6A 1K7


CN K6A 1K7

SHIP BY: 02/16/18  
10404-0 GRANITE STREET  
CHARLOTTE NC 28273

"TW Metals MSDS data is available on our web site at [www.twmetals.com](http://www.twmetals.com). MSDS data can be found under the Technical Resources Tab, Product Statistics & Data and the TW Metals MSDS's heading. If you do not have web site access you may telephone 610-458-1300 and we will mail or fax a copy of our current MSDS data to your location."

"CERTIFICATE OF CONFORMANCE"

"TW Metals certifies that the material supplied on this purchase order and contained in the heat/lot number referenced above has been manufactured, inspected, and tested in accordance with the material specification. These records are on file at TW Metals. Packaging material for shipments to Europe and China consists of manufactured wood products and complies with the European emergency measures for coniferous non-manufactured wood packing material"

Authorized Test Report Clerk  Date: 2/16/18

Date: 2/16/18

These commodities have been exported from the United States in accordance with the U.S. export control laws, export administrations regulations. Diversion contrary to U.S. law prohibited.

**THANK YOU FOR THIS ORDER**

TERMS AND CONDITIONS APPLICABLE TO THE SALE OF THESE  
PRODUCTS ARE SET FORTH ON OUR WEBSITE FOR YOUR CAREFUL  
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O'Neal High-Performance Metals Group



# Packing Slip

ORDER NO.: 80913050

FROM: CHIC

PAGE 1

CUST NUMBER: 1203820 NET WGT: 13.533 REQ.DATE: 02/23/18 CONFIRMED  
SOLD TO: SHIP TO:  
DART AEROSPACE LTD DART AEROSPACE LTD  
1270 ABERDEEN ST 1270 ABERDEEN ST  
HAWKESBURY ON HAWKESBURY ON  
CANADA CN K6A 1K7 ONTARIO CANADA CN K6A 1K7

SALESPERSON: DONNA SMALLEY SHIP BY: 02/16/18  
TERMS: NET 30 DAYS VIA: COMMON CARRIER  
F.O.B.: SHIPPING POINT FREIGHT: PREPAID  
CUST ORD NO.: PO039038 RELEASE NO.:  
RECEIVING PHONE:

LINE ITEM DESCRIPTION WIDTH LENGTH  
0001 43377 D6061-T6 1 OD X .188 WA 12 FT ML

CLN#	ORD QTY	INVOICE QTY	SHIPPED QTY	WT	PCS
	24.000 FT	24.000 FT	24.000 FT	13.533	2

\*\* 1 TEST REPORTS REQUIRED \*\*  
\*\* 1 CERTS REQUIRED \*\*

ECCN: EAR99 Export License: NLR Expiration Date: 0/00/00  
PO:49383412 HT:002608730001 PC: 2 CUSTOMER QTY: UOM  
MLT:UNITED STATES MFG:UNITED STATES SLB/CL:225209

BROKERS KUEHNE AND NAGEL LTD

AREA	TYPE OF PKG	PKGS	GRS WEIGHT	WIDTH	LENGTH	HGHT
YRC	CARTON	1.000	19.000	3.0000	150.0000	3
		1.000	19.000			

BY: LM  
RT 000-

UNLOAD TYPE: NONE SPECIFIED

DATE SHIPPED \_\_\_\_\_

DATE FILLED \_\_\_\_\_

THANK YOU FOR THIS ORDER

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O'Neal High-Performance Metals Group



**Packing  
Slip**

ORDER NO.: 80913050

FROM: CHIC

PAGE 2

CUST NUMBER: 1203820 NET WGT:

SOLD TO:

DART AEROSPACE LTD

1270 ABERDEEN ST

HAWKESBURY ON

CANADA

CN K6A 1K7

13.533 REQ.DATE: 02/23/18 CONFIRMED

SHIP TO:

DART AEROSPACE LTD

1270 ABERDEEN ST

HAWKESBURY ON

ONTARIO CANADA

CN K6A 1K7

SALESPERSON:

DONNA SMALLEY

TERMS:

NET 30 DAYS

F.O.B.:

SHIPPING POINT

CUST ORD NO.:

PO039038

VIA:

COMMON CARRIER

FREIGHT:

PREPAID

RELEASE NO.:

RECEIVING PHONE:

SHIP BY:

02/16/18

235 TUBEWAY

CAROL STREAM

IL 60188

"TW Metals MSDS data is available on our web site at [www.twmetals.com](http://www.twmetals.com). MSDS data can be found under the Technical Resources Tab, Product Statistics & Data and the TW Metals MSDS's heading. If you do not have web site access you may telephone 610-458-1300 and we will mail or fax a copy of our current MSDS data to your location."

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Authorized Test Report Clerk

*Luziraida Matos*

Date: 2/16/18

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**THANK YOU FOR THIS ORDER**

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<http://www.twmetals.com/invoice-terms.html>



235 TUBEWAY  
CAROL STREAM IL 60188  
Tel: 630-690-0110  
FAX: 16306902105

Invoice#: 80913050  
Cust. PO#: P0039038  
Incoterms: SHIPPING POINT  
Frt. Terms: PREPAID  
Ship Via: COMMON CARRIER

## COMMERCIAL INVOICE

<b>Sold To:</b> DART AEROSPACE LTD 1270 ABERDEEN ST HAWKESBURY ON CANADA CN K6A 1K7 C  Contact: CHANTAL 16136321053	<b>Invoice Date:</b> 2/16/18
	<b>Ship Date:</b> 2/16/18
	<b>Payment Terms:</b> NET 30 DAYS
	<b>Ship To/Final Destination:</b> DART AEROSPACE LTD 1270 ABERDEEN ST HAWKSBURY ON ONTARIO CANADA CN K6A 1K7
<b>Freight Forwarder/Intermediate Ship To:</b>	

ITEM#/LINE#	DESCRIPTION	QUANTITY	UNIT VALUE	SUBTOTAL
43377	D6061-T6 1 OD X .188 WA	24.000 FT	\$ 6.7500 FT	\$ 162.00
		0 IN		
1	ALUMINUM TUBE ROUND	2.000 PC		
	PART NUMBER:			
	ECCN: EAR99			
	SCHEDULE B:7608.20.0030			
	ALUM PIPE/TUBE - SEAMLESS			
	NET WGT: 13.533 LBS			
	COUNTRY OF MFG: UNITED STATES			.00
	FREIGHT CHARGES			
	QUANTITY AND TYPE OF BOXES:			
	1 CARTON			
	150.0000 X 3.0000 X 3.0000			
	TOTAL WGT: 19.000 LBS			
	GROSS WGT: 19.000 LBS			
EXPORT LICENSE NUMBER: NLR EXPIRATION DATE: 00/00/00				
TW METALS, INC CERTIFIES THAT THE COUNTRY OR COUNTRIES OF MANUFACTURE INDICATED ABOVE IS TRUE AND CORRECT AS CONTAINED IN THE RECORDS OF TW METALS, INC THESE ITEMS ARE CONTROLLED BY THE U.S. GOVERNMENT AND AUTHORIZED FOR EXPORT ONLY TO THE COUNTRY OF ULTIMATE DESTINATION FOR USE BY THE ULTIMATE CONSIGNEE OR END-USER(S) HEREIN IDENTIFIED. THEY MAY NOT BE RESOLD, TRANSFERRED, OR OTHERWISE DISPOSED OF, TO ANY OTHER COUNTRY OR TO ANY PERSON OTHER THAN THE AUTHORIZED ULTIMATE CONSIGNEE OR END-USER(S), EITHER IN THEIR ORIGINAL FORM OR AFTER BEING INCORPORATED INTO OTHER ITEMS, WITHOUT FIRST OBTAINING APPROVAL FROM THE U.S. GOVERNMENT OR AS OTHERWISE AUTHORIZED BY U.S. LAW AND REGULATIONS				
Payable in US Dollars			Sales Tax 02/16/18	.00 162.00
Page		1		



Dart Aerospace Ltd.  
1270 Aberdeen St  
Hawkesbury, ON  
K6A 1K7  
Canada

Tel (613) 632-5200

# PURCHASE ORDER

## PO039038

**Supplier:** TWM001-VU  
TW Metals  
PO Box 933014  
Atlanta, GA 31193-3014 USA  
Phone: 585 768 5600  
Fax: 585 768 5601

**PO No:** PO039038

**PO Date:** 2/14/18

**Due Date:** 2/23/18

**Purchase Order**

**Revision:**

**Revision Date:**

**Ship-To Contact:** Lavoie, Chantal  
Phone: clavoie@dartaero.com

**Ship To:** 1270 Aberdeen Street  
Hawkesbury  
ON  
K6A 1K7 Canada  
Phone: 613-632-5200

**Via:** Ground

**Pymt Terms:** Net 30

**Freight Terms:**

**Special Comments:**

**E-MAILED**  
FEB 14 2018

Items										
Line Item	Part	Supplier Part No	Description	Status	Due Date	Order Quantity	Received Quantity	Balance	Unit Price (USD)	Extended Price
1	M304TR0.750W.049		304 Round Tube .750 X .049W : MATERIAL: AISI 304/316 SS SEAMLESS ROUND TUBING AS PER ASTM A213 OR ASME SA213 OR ASTM A269 receive ft	Firmed	2/23/18	120 ft	0 ft	120 ft	\$2.10/ft	\$252.00
2	M6061T6T1.000W.188		6061T6 Round Tube 1.00 X .188W : MATERIAL: 6061-T6/T62/T6510/T6511 SEAMLESS TUBING AS PER WW-T-700/8 OR QQ-A-200/8 OR QQ-A-225/8 OR AMS 4080 OR AMS 40 82 OR AMS 4083 OR ASTM B210 OR ASTM B241 receive ft	Firmed	2/23/18	24 ft	0 ft	24 ft	\$6.75/ft	\$162.00
3	M6061T6T5.000W.125		6061-T6 Tube 5.00 X.125W : MATERIAL: 6061-T6/T62/T6510/T6511 SEAMLESS TUBING AS PER WW-T-700/8 OR QQ-A-200/8 OR QQ-A-225/8 OR AMS 4080 OR AMS 40 82 OR AMS 4083 OR ASTM B210 OR ASTM B241 receive ft	Firmed	2/23/18	12 ft	0 ft	12 ft	\$10.00/ft	\$120.00

## PURCHASE ORDER

Items										
Line Item	Part	Supplier Part No	Description	Status	Due Date	Order Quantity	Received Quantity	Balance	Unit Price (USD)	Extended Price
4	M6061T6T0.625W.065	✓	6061-T6 Round Tube .625 X.065W : MATERIAL: 6061-T6/T62/T6510/T6511 SEAMLESS TUBING AS PER WW-T-700/8 OR QQ-A-200/8 OR QQ-A- 225/8 OR AMS 4080 OR AMS 40 82 OR AMS 4083 OR ASTM B210 OR ASTM B241 receive ft	Firmed	2/23/18	96 ft	0 ft	96 ft	\$3.15/ft	\$302.40
5	M6061T6T2.00W0.125	✓	6061T6 Round Tube 2.00 X.125W : MATERIAL: 6061-T6/T62/T6510/T6511 SEAMLESS TUBING AS PER WW-T-700/8 OR QQ-A-200/8 OR QQ-A- 225/8 OR AMS 4080 OR AMS 40 82 OR AMS 4083 OR ASTM B210 OR ASTM B241 receive ft	Firmed	2/23/18	12 ft	0 ft	12 ft	\$8.50/ft	\$102.00
6	M4130NT0.750W.049	✓	4130 Round Tube .750 X.049W : MATERIAL: AISI 4130N STEEL TUBING AS PER MIL-T-6736 OR AMS 6371/6360/6361/6362 6373/6374 receive ft	Firmed	2/23/18	20 ft	0 ft	20 ft	\$6.00/ft	\$120.00
7	M6061T6T0.500W.058	✓	6061-T6 Round Tube .500 X.058W : MATERIAL: 6061-T6/T62/T6510/T6511 SEAMLESS TUBING AS PER WW-T-700/8 OR QQ-A-200/8 OR QQ-A- 225/8 OR AMS 4080 OR AMS 40 82 OR AMS 4083 OR ASTM B210 OR ASTM B241 receive ft	Firmed	2/23/18	60 ft	0 ft	60 ft	\$1.75/ft	\$105.00
Grand Total:									\$1,163.40	

## Order Notes

## Procurement Quality Clauses

- A005 right of entry
- A012 chemical and physical test report
- A016 personnel qualification
- A017 raw material identification (as applicable)
- A026 certification of material conformance
- A041 quality management system
- A042 dart notification by supplier
- A043 retention of quality documents
- A048 counterfeit parts avoidance, detection, mitigation and disposition program
- A049 supplier awareness

Terms & Condition of Purchasing(Suppliers) and Procurement Quality Clauses are an integral part of our AS9100 requirements. To learn in detail, please visit [www.dartaerospace.com](http://www.dartaerospace.com) for further explanation.

Plex 2/14/18 9:57 AM dart.lavoie.chantal

PUFA™

Producer of Premium Stainless Steel Seamless Tubes

## MILL TEST REPORT

Purchaser.: TW METALS-Cranbury				Certificate No.: 16-3-175					
Contract No.: TWM P.O.No.: M49339141				Date of Issue.: 2016.3.31					
Commodity: Stainless Steel Seamless Tubes				Specifications: ASTM A213-15c/ASME SA213-15/ASTM A269-15a EAW					
Process: Cold Drawn				Delivery Condition: OD Polished to 240 Grit					
Steel Grade	Heat Number	Lot Number	Dimensions				Quantity		
TP304/TP304L	YX1508-708	2-115	3/4" x 0.049" x 20'				Pieces	Feet	
							250	5,000	
Chemical Composition by Weight (%)									
Element	C	Mn	P	S	Si	Cr	Ni	Mo	Co
Requirements	≤0.035	≤2.00	≤0.045	≤0.030	≤1.00	18.00-20.00	8.00-12.00	-	-
Ladle Analysis	0.021	0.68	0.033	0.002	0.26	18.35	8.05	-	-
Product Analysis	0.019	0.76	0.032	0.006	0.27	18.59	8.28	-	-
Mechanical Properties									
Test Item	Elongation (% in 2")		Tensile Strength (PSI)			Yield Strength (PSI)			
			Rm			Rp / 0.2%			
Requirements	≥35		≥75,000			≥30,000			
Test Results	61/62		93,000/94,000			40,000/41,000			
Test Item	Reduction of Area Z (%)	Hardness	Cold Bend Test	Flaring Test	Flattening Test	Flange Test	P.M.I. Test		
Requirements	-	HRB≤80	-	22%	e=0.09	-	-		
Test Results	-	76/78	-	Passed	Passed	-	OK		
Test Item	Eddy Current Test	Air Underwater Pressure Test	Ultrasonic Test	Intergranular Corrosion Test	Macroscopic Inspection				
Requirements	ASTM E 426	-	-	ASTM A262 E	End Cut	Appearance			
Test Results	Passed	-	-	OK	OK	OK			

ISO 9001:2008 Certified by Intertek 110703068

PED Certified by SZUTEST 2195-PED-1526002

## Additional Remarks:

- (1) All tubes annealed to above 1900 Deg F and water quenched below 800 Deg F in 3 minutes
- (2) All tubes tested per ASTM A1016-15
- (3) Materials is NACE MR0103-2007 compliant (per Section 2.5)
- (4) Materials is NACE MR0175/ISO 15156-2003 compliant (per Section 4.2.1)
- (5) In Compliance with EN 10204-3.1
- (6) In Compliance with RoHS Stipulation
- (7) No weld repair performed
- (8) Free from mercury contamination
- (9) Free from radioactive contamination
- (10) Billets melt and pipes/tubes manufactured in China
- (11) All tubes 100% PMI tested
- (12) All tubes 100% Eddy Current tested

CANNOT CERTIFY COMPLIANCE  
FAR BAA / DFARS BAA / FAR TAA



By:

James Shi

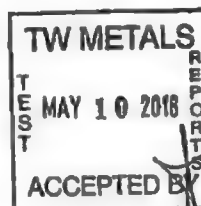
James Shi / Manager

Quality Control Department

We hereby certify that this report is true and correct.

Shanghai Pufa Stainless Steel Pipe Factory

No. 59, Shuangye Road, Wanggang, New Pudong District, Shanghai, China





# KAISER ALUMINUM FABRICATED PRODUCTS

*Best in Class*

## CERTIFIED TEST REPORT

<http://Online.KaiserAluminum.com>

KAISER ALUMINUM  
FABRICATED PRODUCTS, LLC  
6573 W. WILLIS ROAD  
CHANDLER, AZ 85226

CUSTOMER PO NUMBER: M49372137-1		CUSTOMER PART NUMBER: 42558-144		PRODUCT DESCRIPTION: Drawn Seamless Tube/Pipe	
KAISER ORDER NUMBER: 223623	LINE ITEM: 001	SHIP DATE: 07/25/2017	KAISER LOT NUMBER: F00245907	ALLOY: 6061	TEMPER: T6
WEIGHT SHIPPED: 237.000 LB	QUANTITY: 147.000 PCS	B/L NUMBER: 226200	DIAM/DAF/THKNS: 	WIDTH: 	LENGTH: 12.000 FT
SHIP TO: TW METALS INC 27 ENGLEHARD DRIVE EXIT 8A OFF NJ TPK MONROE TWP, NJ 08831 USA			SOLD TO: TW METALS INC 760 CONSTITUTION DRIVE SUITE 204 EXTON, PA 19341 USA		

### Actual Physical Properties

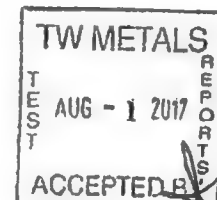
REFERENCE	DASH#	SAMPLE#	UTS (KSI)	YTS (KSI)	ELONG%	HARDNESS	CON% IACS	BEND
F00245907	0001	1	47.5	41.1	20.0	N/A	N/A	N/A

### Chemical Composition (wt%), Aluminum Remainder

LIMITS	Si	Fe	Cu	Mn	Mg	Cr	Zn	Ti	Pb	Bi	Zr	Ea	Tot
Maximum	0.80	0.70	0.40	0.15	1.20	0.35	0.25	0.15	NA	NA	NA	0.05	0.15
Minimum	0.40	0.00	0.15	0.00	0.80	0.04	0.00	0.00	NA	NA	NA	0.00	0.00
D20417	.57	.25	.20	.04	.98	.08	.04	.03	.00	.00	.00	.01	.02

### Applicable Requirements:

Description: OD: 0.6250"; Wall: 0.0650"; Round @  
AMS-WW-T-700/6C ASTM B210-12 WW-T-700/6F AMS4082P  
WE TAKE EXCEPTION TO PARA. 5.2.1., Per AMS4082P, WAS NOT OILED.  
This Product Complies to FAR BAA, DFARS BAA, FAR TAA  
COMPLIES TO DIN EN 10204 JAN 2005  
No Weld Repair. Mercury Free.



### Miscellaneous Notes

MANUFACTURED IN USA MELTED IN USA  
MATERIAL COMPLIES WITH FAR BAA (FAR 52.225-1, BUY AMERICAN ACT- SUPPLIES), DFARS BAA (DFARS 252.225-7001 BUY AMERICAN ACT & BAL OF PAYMENTS PROG), AND FAR TAA (FAR 52.225-5 TRADE AGREEMENTS).

Plant Serial: 00025661  
Kaiser Order Number: 223623  
Line Item: 001

**KAISER**  
**ALUMINUM**  
**FABRICATED PRODUCTS**

*Best in Class*

**CERTIFIED TEST REPORT**

<http://Online.KaiserAluminum.com>

KAISER ALUMINUM  
FABRICATED PRODUCTS, LLC  
6573 W. WILLIS ROAD  
CHANDLER, AZ 85226

**CERTIFICATION**

Kaiser Aluminum Fabricated Products, LLC ('Kaiser') hereby certifies that metal shipped under this order has been inspected and tested and found in conformance with the applicable specifications forming a part of the description set forth in Kaiser's sales acknowledgement form. Any warranty is limited to that shown on Kaiser's general terms & conditions of sale. Test reports are on file subject to examination.

Hans Kattentidt, Quality Manager



# Abnahmeprüfzeugnis 3.1 - DIN EN 10204:2005



Inspection Certificate 3.1 - DIN EN 10204:2005 / Certificat de Reception 3.1- DIN EN 10204:2005

**Kunde:** TW Metals (PA)

**Zeugnisnummer:** 1117/17

**Client:**

**Cert No. / No. du certificat:**

760 Constitution Drive P.O. Box 644  
19341 - 06-EXTON, PA USA

**Bestellnummer:** M 49371766

**Order No. / No. de commande**

**Produkt:** Rohre nahtlos gepresst und gezogen

**ALUnna Auftragsbest.-Nr.:** 65598/100

**Product / Produit:** Tubes seamless extruded and drawn

**ALUnna Conf.-No. / conf. de commande:**

**Spezifikation:** AMS - WW - T - 700/6C; AMS 4082P; ASTM B 210-12; WW-T-700/6F; -

**Specification:**

**Werkstoff:**

**Zustand:**

**Alloy/Alliage:**

**Temper/Etat**

**Abmessung**

2,000 INCH x 1,750 INCH x 0,125 INCH x 12,000 FEET

**Size / Dimension**

**Kennzeichnung**

ALUnna - CERT. NO. 1117/17 - WW-T-700/6(F) - AMS-WW-T-700/6 (C) - AMS4082 (P) - ASTM B210 (12) - 2.000" OD X 0.125"

**Marking/Marquage:**

WALL - 6061-T6 - CAST NO. 6788-1 - HEAT LOT NO. 1403313 - ALUNNA ORDER CONF. NO. 65598/100 - CPB 300

**Lieferung**

pcs.

lbs

**Country of Manufacture:** Germany

**Delivered Material / Matériel délivré:**

57

595

## 1. Chemische Analyse

## Chemical Analysis / analyse chimique

	Si	Fe	Cu	Mn	Mg	Cr	Zn	Ti	Pb	Zr	Bi	Sn	Ni	Na
Charge/ min.	0,40		0,15		0,8	0,04								
Cast No. max.	0,8	0,7	0,40	0,15	1,2	0,35	0,25	0,15						
6788-1/17	0,681	0,343	0,212	0,114	0,935	0,255	0,034	0,033	0,001	0,0329	0,0085	0,0008	0,0070	0,0001

**Hydrogen content:** 0,14

**ccm/100 g Al** Elements without indication < 0,01 %

**country of melt manufacturer:** Germany

Products are in accordance with applicable RoHS

FAR BAA:	Cannot certify compliance
DFARS BAA:	Complies
FAR TAA:	Cannot certify compliance



**Ergebnis der Prüfungen:**

Es wird bestätigt, daß das Material geprüft wurde und den Vereinbarungen bei der Bestellannahme entspricht

**Test results:**

We confirm that the material has been tested and applies to the agreements made on receipt of the order

**Resultats:**

Nous confirmons que le matériel a été contrôlée et correspond avec les conventions faites à la réception de la commande

27.06.2017

Certified acc. DIN EN ISO 9001:2008 and DIN EN 9100:2009

**released by**

valid until 2019-11-10

Hollmann

TÜV Nord - Cert.- Reg. No.: 44 100 131576 and 44 117 131576

Aluminiumwerk Unna AG, Uelzener Weg 36, 59425 Unna, Germany

Electronically Generated Certificate - Valid without signature

# Abnahmeprüfzeugnis 3.1 - DIN EN 10204:2005



Inspection Certificate 3.1 - DIN EN 10204:2005 / Certificat de Reception 3.1- DIN EN 10204:2005

**Kunde:** TW Metals (PA)

**Client:**

760 Constitution Drive P.O. Box 644  
19341 - 06-EXTON, PA USA

**Zeugnisnummer:** 1117/17

**Cert No. / No. du certificat:**

**Bestellnummer:** M 49371766

**Order No. / No. de commande**

**ALUnna Auftragsbest.-Nr:** 65598/100

**ALUnna Order Conf.No.:**

**Kennzeichnung**

**Marking/Marquage:**

ALUnna - CERT. NO. 1117/17 - WW-T-700/6(F) - AMS-WW-T-700/6 (C) - AMS4082 (P) - ASTM B210 (12) - 2.000" OD X 0.125"  
WALL - 6061-T6 -CAST NO. 6788-1 - HEAT LOT NO. 1403313 - ALUNNA ORDER CONF. NO. 65598/100 - CPB 300

**Lieferung**

**Delivered Material / Matériel délivré:**

pcs.

57

lbs

595

**Country of Manufacture: Germany**

## 2. Mechanische Eigenschaften

## Mechanical Properties / Valeurs Mécaniques

Anforderungen Requirements	tensile (Rm) ksi	yield (Rp0,2) ksi	elongation 2" %	elongation A %	Hardness HB	Cast/Heat/ pcs.
	42,0	35,0	10,0			
1	46,8	38,2	17,0			1403313
2	46,7	38,3	17,4			

**Ergebnis der  
Prüfungen:**

Es wird bestätigt, daß das Material geprüft wurde und den Vereinbarungen bei der Bestellannahme entspricht

We confirm that the material has been tested and applies to the agreements made on receipt of the order

**Test results:**

Nous confirmons que le matériel a été contrôlée et correspond avec les conventions faites à la réception de la commande

**Resultats:**

Certified acc. DIN EN ISO 9001:2008 and DIN EN 9100:2009

valid until 2019-11-10

TÜV Nord - Cert.- Reg. No.: 44 100 131576 and 44 117 131576

Aluminiumwerk Unna AG, Uelzener Weg 36, 59425 Unna, Germany

released by

Hollmann

27.06.2017

Electronically Generated Certificate - Valid without signature



Benteler Steel/Tube GmbH  
Postfach 13-40  
33043 Paderborn  
Deutschland  
Tel.: +49 5254 81-0 Fax: +49 5254 13658

**BENTELER**

Steel/Tube

**ABNAHMEPRÜFZEUGNIS EN 10204-3.1**

INSPECTION CERTIFICATE EN 10204-3.1

CERTIFICAT DE RECEPTION EN 10204-3.1

Dokument-Nr.:  
Document No.:  
No. du document:

41-1013940/001/Z

Prüf-Nr.:  
Inspection No.:  
No. du certificat:

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Pos.	Stück	Maße	Gesamtlänge	Gewicht	Schmelzen-Nr.	Prüfdruck	Rohr-Nr.-Gruppe	Vielfachlängen
Item	Number	Dimensions	Length total	Weight	Heat No.	Test pressure	Tube number group	Multiple lengths
Poste	Nombre	Dimensions	Longueur totale	Poids	Np. de coulée	Pression d'épreuve	Série de no. des tubes	Longueurs multiples
0008	120	0,750" O.D. ± 0,049" WT 20 FT - 24 FT	2874,02	1049	602196			
0008	120	0,750" O.D. ± 0,049" WT 20 FT - 24 FT	2877,95	1054	603839			

**Schmelzenanalyse [%] / Heat analysis [%] / Analyse sur coulée [%]**

Pos.	Schmelzen-Nr.	C	SI	MN	P	S	CR	MO	NI	CU
Item	Heat No.									
Poste	No. de coulée									
0008	602196	0,320	0,260	0,55	0,006	0,001	0,89	0,18	0,09	0,12
0008	603839	0,320	0,270	0,54	0,008	0,003	0,88	0,17	0,10	0,12

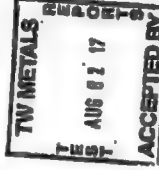
**Produktanalyse [%] / Product analysis [%] / Analyse sur produit [%]**

Pos.	Schmelzen-Nr.	C	SI	MN	P	S	CR	MO	NI	CU
Item	Heat No.									
Poste	No. de coulée									
0008	602196	0,310	0,280	0,56	0,009	0,001	0,89	0,19	0,09	0,17
0008	603839	0,320	0,270	0,54	0,009	0,003	0,88	0,17	0,09	0,11

**Prüfergebnisse / Test results / Résultats des essais**

Die Röhre wurden zerstörungsfrei geprüft: The tubes are non destructive tested: Les tubes ont passé un essai non destructif:	ET-test: acc. to ASTM-A 450; ET - Test method: acc. to ASTM-E 309; for imperfections; ET-test: ET with rotating pancake coils; according to EN 10246-3; imperfections; Notch depth: 0,30 mm; notch width < = notch depth; notch length min. 2 x transducer width (max. 50 mm)	PASSED
--	---	--------

Augensichtkontrolle: Visual inspection: Examen visuel:	Materialeverwechslungsprüfung: Material conformity test: Vérification de la nuance:	PASSED	Maßkontrolle: Dimensions examination: Vérification des dimensions:	PASSED
--	---	--------	--	--------



AB

Benteler Steel/Tube GmbH  
Postfach 13 40  
33043 Paderborn  
Deutschland  
Tel.: +49 5254 81-0 Fax: +49 5254 13665



Steel/Tube

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Prüf-Nr.:  
Inspection No.:  
No. du certificat:

41-1013940/001/R

Dokument-Nr.:  
Document No.:  
No. du document:

ABNAHMEPRÜFZEUGNIS EN 10204-3.1

INSPECTION CERTIFICATE EN 10204-3.1

CERTIFICAT DE RECEPTION EN 10204-3.1

Ergebnisse der mechanischen Prüfung / Results of mechanical testing / Résultats des essais mécaniques

Die Probenahme erfolgte an Vielfachlängertei.

The sampling was carried out on multiple lengths.

L'échantillonnage était réalisé aux longueurs multiples.

Zugversuch längs bei RT, Vollprobe / Tensile test longitudinal at RT, Full section test specimen / Essai de traction longitudinal à TA, Eprouvette à section complète

Pos.	Proben-Nr.	Schmelzen-Nr.	Probenabmessung	Streckgrenze	Zugfestigkeit	Dehnung
Item	Specimen No.	Heat No.	Specimen dimensions	Yield strength	Tensile strength	Elongation
Poste	No. de l'éprouv.	No. de coulée	Dimensions de l'éprouv.	Limite élastique	Résistance à la traction	Allongement
Anforderungen			mm	Rp 0,2 %	Rm	A2 <sup>m</sup>
Requisitements				KSI	KSI	%
Exigences				MIN 75	MIN 95	MIN 12,00
0008	000001	602196	19,05 X	1,25	130	18,00
0008	000002	602196	19,05 X	1,25	131	18,00
0008	000003	602196	19,05 X	1,25	130	16,00
0008	000001	603839	19,05 X	1,25	130	18,00
0008	000002	603839	19,05 X	1,25	131	18,00
0008	000003	603839	19,05 X	1,25	130	16,00

Randentkohlung / Surface decarburized / Décarburation superficielle

Pos. / Item / Poste: 0008

acc. to AMS-6360, partial decarburization: outside max. 0.009 in, partial decarburization inside max. 0.008 in, partial decarburization outside and inside max. 0.012 in, partial decarburization outside and inside max. 0.306 mm, without total decarburization; partial decarb. out. max.: 0.229 mm; partial decarb. ins. max.: 0.229 mm

Vermerk / Remark / Remarque

Pos. / Item / Poste: 0008

Certificate remarks: The steel grade corresponds to MIL-T-67368, AMS 6360M, material free from mercury contamination, FAR BAA: 52.226-1 CANNGT COMPLY, DFARS BAA: 252.226-7001 CAN COMPLY, FAR TAA: 52.226-5 CAN COMPLY, No weld repair has been carried out, Country of origin of the material and heat: Germany, Aircraft quality steel acc. to AMS 2301K; see appendix page 1 of 1

Pos. / Item / Poste: 0008

Macroscopic examination: acc. to ASTM-E 381

Pos. / Item / Poste: 0008

Magnetic particle inspection: acc. to AMS 2301K/ASTM-E 1444, on prematerial



AKS



Benteler Steel/Tube GmbH  
Postfach 13 40  
33043 Paderborn  
Deutschland  
Tel.: +49.5254.81-0 Fax: +49.5254.13966

**BENTELER** 

Steel/Tube

ABNAHMEPRÜFZEUGNIS EN 10204-3.1

INSPECTION CERTIFICATE EN 10204-3.1  
CERTIFICAT DE RECEPTION EN 10204-3.1

Pos. / Item / Poste: 0008

Grain size: acc. to ASTM-E 112; Grain size and fineness; Grain size: Longitudinal structural micrography, on prematerial

41-1013940/001/Z

Dokument-Nr.:  
Document No.:  
No. du document:

Prüf-Nr.:  
Inspection No.:  
No. du certificat:

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Verkäufer(in) / Sales Personnel / Personne chargée : Mr Schwarz, Tel.: 05254 81-204311, Fax: 204391

Paderborn Schloss Neuhaus, 30.08.2017, TEL.: 05254.81-201767 FAX: 05254.81-201752

Abnahmebeauftragter  
Inspection representative

Contrôleur

I. A. THOMAS GOLLAN / TEM

Es wird bestätigt, daß die gelieferten Erzeugnisse den techn. Lieferbedingungen des Auftrages entsprechen. Dieses Dokument wurde mittels EDV erstellt und ist ohne Unterschrift rechts gültig.  
We certify that the supplied products comply with the order specification. This document was prepared by means of electronic data processing and is valid without signature.  
Nous attestons que les produits livrés sont conformes aux stipulations de la commande. Ce document a été établi par traitement électronique de l'information et est valide sans signature.



AC

Benteler SteelTube GmbH

Rastdenkstraße 1

33104 Paderborn

Germany

Tel: 49 5254 81-0 Fax: 49 5254 13963

**BENTELER**

Steel/Tube

Abnahmeprüzugs-Nr. EN 10204-3.1 / Anhang  
Inspection Certificate EN 10204.3.1 / appendix  
Certificat de réception EN 10204-3.1 / appendice

Dokument-Nr.  
Document No.:  
No. de document:

41-1013940/001/Z

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Page: 1 of 1  
Page: de

Halbzeuguntersuchung: Stahlsorte 4130 / Semi finished product examination: grade 4130 / Produit semi-fini nuance 4130

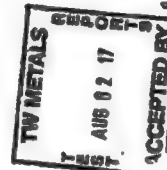
Schmelzen-Nr. Heat No. Coulée No.	Position Item Poste	Korngröße Grain size Grossueur de grain (ASTM-E 112)	Härtebarkeit (min. Anforderungen) Hardenability (min. requirements) Trempeabilité (exigence min.) (ASTM-A 255)		Magnetpulverprüfung Magnetic particle inspection Essai à la poudre magnétique (AMS 2301 K/ASTM- 1444)	Makroätzung Macrostructure test Essai de macrostructure (ASTM-E 381)				
			J(5/16") min. 35 HRC	J(8/16") min. 28 HRC		F max. 0,34	S max. 0,25	max. S 2.	max. R 1	max. C 2
602196	008	9	44	34	0,020	0,015		S 2	R 1	C 2
Decarburization Depth		Outside 0,000 mm	Inside 0,000 mm							
603839	008	9	38	31	0,020	0,020	0,020	S 2	R 1	C 2
Decarburization Depth		Outside 0,000 mm	Inside 0,000 mm							

Der Stahl ist frei von Quecksilberverunreinigungen. / The steel is free of mercury contamination. / L'acier est libre des contaminations de mercure.

Paderborn Schloß Neuhaus, 30.06.2017  
Tel.: (0)5254.81-201760 Fax: (0)5254.81-201752

Abnahmebeauftragter  
Inspection representative  
Contrôleur

Thomas Goplan



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# KAISER ALUMINUM FABRICATED PRODUCTS

## CERTIFIED TEST REPORT

<http://Online.KaiserAluminum.com>

KAISER ALUMINUM  
FABRICATED PRODUCTS, LLC  
6573 W. WILLIS ROAD  
CHANDLER, AZ 85226

CUSTOMER PO NUMBER: M49378297-1		CUSTOMER PART NUMBER: 42276		PRODUCT DESCRIPTION: Drawn Seamless Tube/Pipe	
KAISER ORDER NUMBER: 224471	LINE ITEM: 001	SHIP DATE: 11/07/2017	KAISER LOT NUMBER: F00254239	ALLOY: 6061	TEMPER: T6
WEIGHT SHIPPED: 463.000 LB	QUANTITY: 406.000 PCS	B/L NUMBER: 227417	DIAM/DAF/THKNS: 	WIDTH: 	LENGTH: 12.000 FT
SHIP TO:  TW METALS INC 235 WEST TUBEWAY DRIVE CAROL STREAM, IL 60188 USA			SOLD TO:  TW METALS INC 760 CONSTITUTION DRIVE SUITE 204 EXTON, PA 19341 USA		

### Actual Physical Properties

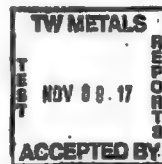
REFERENCE	DASH#	SAMPLE#	UTS (KSI)	YTS (KSI)	ELONG%	HARDNESS	CON% IACS	BEND
F00254239	0001	1	46.6	40.1	18.0	N/A	N/A	N/A
F00254239	0002	1	44.8	38.8	17.0	N/A	N/A	N/A

### Chemical Composition (wt%), Aluminum Remainder

LIMITS	Si	Fe	Cu	Mn	Mg	Cr	Zn	Ti	Pb	Bi	Zr	Ea	Tot
Maximum	0.80	0.70	0.40	0.15	1.20	0.35	0.25	0.15	NA	NA	NA	0.05	0.15
Minimum	0.40	0.00	0.15	0.00	0.80	0.04	0.00	0.00	NA	NA	NA	0.00	0.00
D0674A	.60	.26	.21	.05	.97	.09	.04	.03	.00	.00	.00	.01	.02

### Applicable Requirements:

Description: OD: 0.5000"; Wall: 0.0580"; Round @  
AMS4082P AMS-WW-T-700/6C ASTM B210-12 WW-T-700/6F  
WE TAKE EXCEPTION TO PARA. 5.2.1., Per AMS4082P, WAS NOT OILED.  
This Product Complies to FAR BAA, DFARS BAA, FAR TAA  
COMPLIES TO DIN EN 10204 JAN 2005  
No Weld Repair. Mercury Free.



### Miscellaneous Notes

MANUFACTURED IN USA MELTED IN USA  
MATERIAL COMPLIES WITH FAR BAA (FAR 52.225-1, BUY AMERICAN ACT- SUPPLIES), DFARS BAA  
(DFARS 252.225-7001 BUY AMERICAN ACT & BAL OF PAYMENTS PROG), AND FAR TAA (FAR 52.225-5  
TRADE AGREEMENTS).

Plant Serial: 00026618  
Kaiser Order Number: 224471  
Line Item: 001

NC



KAISER ALUMINUM  
FABRICATED PRODUCTS, LLC  
6573 W. WILLIS ROAD  
CHANDLER, AZ 85226

## CERTIFIED TEST REPORT

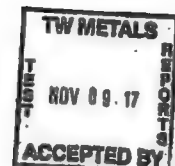
<http://Online.KaiserAluminum.com>

### CERTIFICATION

Kaiser Aluminum Fabricated Products, LLC ('Kaiser') hereby certifies that metal shipped under this order has been inspected and tested and found in conformance with the applicable specifications forming a part of the description set forth in Kaiser's sales acknowledgement form. Any warranty is limited to that shown on Kaiser's general terms & conditions of sale. Test reports are on file subject to examination.

Hans Kattentidt, Quality Manager

A handwritten signature in black ink, appearing to read "Hans Kattentidt", written over a circular stamp or mark.



W

# MATERIAL RECEIPT INSPECTION FORM

MATERIAL: m60616 to 500w1058

PO / BATCH NO.: 039038 / 5044574

DATE: FEB 20 2018

MATERIAL CERT REC'D: yes  
 QUANTITY RECEIVED: 60'  
 QUANTITY INSPECTED: 60'  
 QUANTITY REJECTED: 0

THICKNESS ORDERED: W1058  
 THICKNESS RECEIVED: W1058  
 SHEET SIZE ORDERED: N/A  
 SHEET SIZE RECEIVED: N/A

DESCRIPTION	NCR (Check Y/N)	COMMENTS
SURFACE DAMAGE	Y (N)	
CORRECT FINISH	(Y) N	
CORROSION	Y (N)	
CORRECT GRAIN DIRECTION	(Y) N	
CORRECT MATERIAL PER M-DRAWING	(Y) N	<u>W1058-7-780/6</u>
CORRECT THICKNESS	(Y) N	
PHOTO REQUIRED	Y (N)	
CORRECT REF # TO LINK CERT	(Y) N	<u>Heat # FCC254239 0002</u>
CORRECT MATERIAL IDENTIFICATION	(Y) N	
CORRECT M# ON THE MATERIAL	(Y) N	
DOES THIS MATERIAL REQUIRE ENGINEERING SIGN OFF	Y (N)	
DOES THIS REQUIRE AN EXTRUSION REPORT	Y (N)	

CUT SAMPLE PIECE OF MATERIAL AND PREFORM A HARDNESS CHECK. RECORD RESULTS BELOW					
	HRC	HRB	DUR A	DUR D	WEBSTER
TYPE OF MATERIAL					
SIZE OF TEST SAMPLE					
HARDNESS / DUROMETER READING					

testers located in the Quality Office

QC 18 INSPECTION	ENGINEERING SIGNOFF (if required)
INSPECTED BY: <u>DAS 11</u> DATE: <u>9-89 FEB 20 2018</u>	SIGNED OFF BY: _____ DATE: _____

Attach this inspection sheet with the corresponding material cert and remit to be scanned and received in

PURCHASE MATERIAL: 8081-T8/T62/T6510/T6511 SEAMLESS TUBING

SPECIFICATION:

WWT-7006  
OR QQ-C-200/8 OR QQ-A-225/8  
OR AMS 4080 OR AMS 4082 OR AMS 4083  
OR ASTM B210 OR ASTM B241

PART NUMBER:

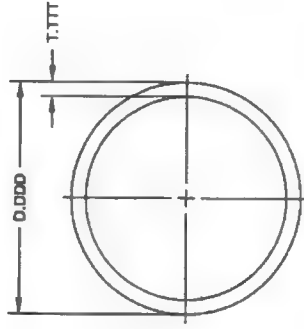
M6061T6T1D.DDDWIT.TTT  
OD | WALL

WHERE "D.DDD" = OD IN INCHES  
"T.TTT" = WALL THICKNESS

EG. 3/8" OD X 0.059 WALL = M6061T6T0.375W0.058

MATERIAL TOLERANCE:

PER ANSI H83.2



RELEASED  
2013-07-02

C	COMPLETE REFORMAT. ADDED T6510 & T6511. ADDED AMS 4083, ASTM B210 & ASTM B241 ADDED MATERIAL TOLERANCE	AJS	13.06.12
B	ADD QQ-A-2008 & QQ-A-225/8	CP	04.01.23
A	NEW ISSUE	DS	01.08.21
REV.	DESCRIPTION	BY	DATE
DESIGN	AJS		
DRAWN	AJS		
CHECKED			
MFG. APPR.	M6061T6T		
APPROVED			
DE APPR.			
DATE	13.06.12		
DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA			
DRAWING NO. REV. C			
M6061T6T SHEET 1 OF 1			
TITLE SCALE			
6081-T8 TUBING NTS			
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# MATERIAL RECEIPT INSPECTION FORM

MATERIAL: M4130 NTO 25041049

PO / BATCH NO.: 039038/5044573

DATE: FEB 20 2018

MATERIAL CERT REC'D: yes  
 QUANTITY RECEIVED: 24  
 QUANTITY INSPECTED: 24  
 QUANTITY REJECTED: 0

THICKNESS ORDERED: 11.049  
 THICKNESS RECEIVED: 11.049  
 SHEET SIZE ORDERED: 11/A  
 SHEET SIZE RECEIVED: 11/A

DESCRIPTION	NCR (Check Y/N)		COMMENTS
SURFACE DAMAGE	Y	(N)	
CORRECT FINISH	(Y)	N	
CORROSION	Y	(N)	
CORRECT GRAIN DIRECTION	(Y)	N	
CORRECT MATERIAL PER M-DRAWING	(Y)	N	<u>AMS 7636</u>
CORRECT THICKNESS	(Y)	N	
PHOTO REQUIRED	Y	(N)	
CORRECT REF # TO LINK CERT	(Y)	N	<u>Heat # 602196</u>
CORRECT MATERIAL IDENTIFICATION	(Y)	N	
CORRECT M# ON THE MATERIAL	(Y)	N	
DOES THIS MATERIAL REQUIRE ENGINEERING SIGN OFF	Y	(N)	
DOES THIS REQUIRE AN EXTRUSION REPORT	Y	(N)	

CUT SAMPLE PIECE OF MATERIAL AND PREFORM A HARDNESS CHECK. RECORD RESULTS BELOW					
	HRC	HRB	DUR A	DUR D	WEBSTER
TYPE OF MATERIAL					
SIZE OF TEST SAMPLE					
HARDNESS / DUROMETER READING					

testers located in the Quality Office

QC 18 INSPECTION	ENGINEERING SIGNOFF (if required)
INSPECTED BY: <u>DAS</u> <u>11</u>	SIGNED OFF BY: _____
DATE: <u>FEB 20 2018</u>	DATE: _____

Attach this inspection sheet with the corresponding material cert and remit to be scanned and received in



# SPECIFICATION CONTROL DRAWING

PURCHASE MATERIAL: AISI 4130N SEAMLESS STEEL TUBING  
SPECIFICATION: MIL-T-6736 OR AMS 6371, 6360, 6361, 6362, 6373, 6374  
PART NUMBER: M4130NTD.DDD W. TTT WHERE: "D.DDD" = OUTER DIAMETER (IN INCHES)  
AND "TTT" = WALL THICKNESS (IN INCHES)  
DIA. WALL

EG. 3/4" TUBING WITH .035" WALL = M4130NTD.750W.035

RELEASE  
2012-04-16

B	REFORMAT DWG TO ACCOMMODATE ADDITIONAL TUBE DIAMETERS AND WALL THICKNESS		RP	12.04.02
A	NEW ISSUE		JB	01.05.16
REV	DATE			
DESIGN	JB	DART AEROSPACE LTD		
DRAWN	RP	HAWKESBURY, ONTARIO, CANADA		
CHECKED	AP	DRAWING NO	REV. B	
MFG. APPR.		M4130N-T	SHEET 1 OF 1	
APPROVED		TITLE	SCALE	
DE APPR.		STEEL TUBING	NTS	
DATE	12.04.02	COPYRIGHT © 2001 BY DART AEROSPACE LTD		

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## MATERIAL RECEIPT INSPECTION FORM

MATERIAL: M6061T62 CCW0.125

PO / BATCH NO.: 039038/5044572

DATE: FEB 20 2018

MATERIAL CERT REC'D: YES  
 QUANTITY RECEIVED: 12  
 QUANTITY INSPECTED: 12  
 QUANTITY REJECTED: 0

THICKNESS ORDERED: W0.125  
 THICKNESS RECEIVED: W0.125  
 SHEET SIZE ORDERED: N/A  
 SHEET SIZE RECEIVED: N/A

DESCRIPTION	NCR (Check Y/N)		COMMENTS
SURFACE DAMAGE	Y	(N)	
CORRECT FINISH	(Y)	N	
CORROSION	Y	(N)	
CORRECT GRAIN DIRECTION	(Y)	N	
CORRECT MATERIAL PER M-DRAWING	(Y)	N	WW-T-700/L
CORRECT THICKNESS	(Y)	N	
PHOTO REQUIRED	Y	(N)	
CORRECT REF # TO LINK CERT	(Y)	N	Heat # 1403313
CORRECT MATERIAL IDENTIFICATION	(Y)	N	
CORRECT M# ON THE MATERIAL	(Y)	N	
DOES THIS MATERIAL REQUIRE ENGINEERING SIGN OFF	Y	(N)	
DOES THIS REQUIRE AN EXTRUSION REPORT	Y	(N)	

CUT SAMPLE PIECE OF MATERIAL AND PREFORM A HARDNESS CHECK. RECORD RESULTS BELOW					
	HRC	HRB	DUR A	DUR D	WEBSTER
TYPE OF MATERIAL					
SIZE OF TEST SAMPLE					
HARDNESS / DUROMETER READING					

*testers located in the Quality Office*

QC 18 INSPECTION		ENGINEERING SIGNOFF (if required)
INSPECTED BY: <u>DAS 11</u> DATE: <u>9-20 FEB 20 2018</u>	SIGNED OFF BY: _____ DATE: _____	

Attach this inspection sheet with the corresponding material cert and remit to be scanned and received in

PURCHASE MATERIAL: 6061-T6/7075-T6/7050-T6/7051 SEAMLESS TUBING

SPECIFICATION:

WWT-7008

OR QQ-A-225/8  
OR AMS 4080 OR AMS 4082 OR AMS 4083  
OR ASTM B210 OR ASTM B241

PART NUMBER:

M6061T6T.D.DDDW/T.TTT  
OD | WALL

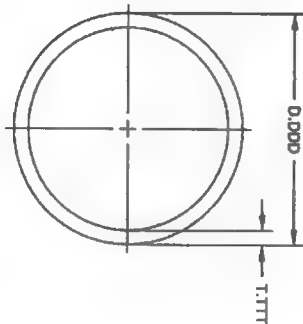
WHERE "D.DDD" = OD IN INCHES

"T.TTT" = WALL THICKNESS

EG. 3.6" OD X 0.059 WALL = M6061T6T0.375W0.059

MATERIAL TOLERANCE:

PER ANSI H33.2



RELEASED  
2013-07-02

C	COMPLETE REFORMAT, ADDED T6610 & T6611. ADDED AMS 4083, ASTM B210 & ASTM B241	AMS	13.06.12
B	ADDED MATERIAL TOLERANCE	CP	04.01.23
A	ADD QQ-A-2008 & QQ-A-225/8	DS	01.08.21
REV.	NEW ISSUE	BY	DATE
DESIGN	ALS		
DRAWN	ALS		
CHECKED	W		
MFG. APPR.	M6061T6T		
APPROVED	TITLE		
DE APPR.	6061-T6 TUBING		
DATE	13.06.12		

COMPANY: 2001 BY DART AEROSPACE LTD  
HAWKESBURY, ONTARIO, CANADA  
REV. C  
SHEET 1 OF 1  
SCALE  
NTS

# MATERIAL RECEIPT INSPECTION FORM

MATERIAL: M606IT6-T-0.625W-0.065

PO / BATCH NO.: 039038/SC44571

DATE: FEB 20 2018

MATERIAL CERT REC'D: yes  
 QUANTITY RECEIVED: 96  
 QUANTITY INSPECTED: 96  
 QUANTITY REJECTED: 0

THICKNESS ORDERED: W.0.625  
 THICKNESS RECEIVED: W.0.625  
 SHEET SIZE ORDERED: N/A  
 SHEET SIZE RECEIVED: N/A

DESCRIPTION	NCR (Check Y/N)		COMMENTS
SURFACE DAMAGE	Y	(N)	
CORRECT FINISH	(Y)	N	
CORROSION	Y	(N)	
CORRECT GRAIN DIRECTION	(Y)	N	
CORRECT MATERIAL PER M-DRAWING	(Y)	N	AMS-WW-T-700/6C
CORRECT THICKNESS	(Y)	N	
PHOTO REQUIRED	Y	(N)	
CORRECT REF # TO LINK CERT	(Y)	N	Heat # F002459070001
CORRECT MATERIAL IDENTIFICATION	(Y)	N	
CORRECT M# ON THE MATERIAL	(Y)	N	
DOES THIS MATERIAL REQUIRE ENGINEERING SIGN OFF	Y	(N)	
DOES THIS REQUIRE AN EXTRUSION REPORT	Y	(N)	

CUT SAMPLE PIECE OF MATERIAL AND PREFORM A HARDNESS CHECK. RECORD RESULTS BELOW					
	HRC	HRB	DUR A	DUR D	WEBSTER
TYPE OF MATERIAL					
SIZE OF TEST SAMPLE					
HARDNESS / DUROMETER READING					

*testers located in the Quality Office*

<b>QC 18 INSPECTION</b>		<b>ENGINEERING SIGNOFF (if required)</b>	
INSPECTED BY: <u>DAS</u>	SIGNED OFF BY: _____		
DATE: <u>9-89 FEB 20 2018</u>	DATE: _____		

Attach this inspection sheet with the corresponding material cert and remit to be scanned and received in

PURCHASE MATERIAL: 6061-T6/62/76510/76511 SEAMLESS TUBING

SPECIFICATION:

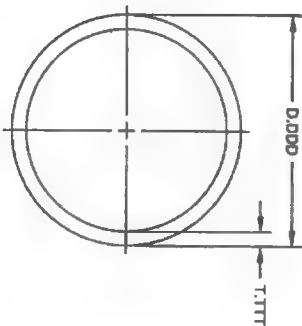
WWT-77008  
OR QQ-A-2008 OR QQ-A-2256  
OR AMS 4080 OR AMS 4082 OR AMS 4083  
OR ASTM B210 OR ASTM B241

PART NUMBER:

M6061T6T P.DDD/WT.TTT  
OD | WALL

WHERE "D.DDD" - OD IN INCHES  
"T.TTT" = WALL THICKNESS

MATERIAL TOLERANCE: EG. 3/8" OD X 0.059 WALL = M6061T6T0.375W0.059  
PER ANSI H35.2



RELEASED  
2013-07-02

C	COMPLETE REFORMAT ADDED T6510 & T6511.	AMS	13.06.12
B	ADDED AMS 4083, ASTM B210 & ASTM B241		
A	ADDED MATERIAL TOLERANCE		
REV.	DESCRIPTION	BY	DATE
A	NEW ISSUE	DS	01.08.21
DESIGN	AMS		
DRAWN	AMS		
CHECKED	AMS		
MFG. APPR.	M6061T6T		
APPROVED			
DE APPR.			
DATE	13.06.12		
DART AEROSPACE LTD HAMMERSBURY, ONTARIO, CANADA			
DRAWING NO. M6061T6T			
TITLE 6061-T6 TUBING			
REV. C			
SHEET 1 OF 1			
SCALE			
NTS			

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## MATERIAL RECEIPT INSPECTION FORM

MATERIAL: 6061-T6 tube 5.00x125W

PO / BATCH NO. Q39038/5044570

DATE: FEB 22 2018

MATERIAL CERT REC'D: yes  
 QUANTITY RECEIVED: 12'  
 QUANTITY INSPECTED: 12'  
 QUANTITY REJECTED: 0

THICKNESS ORDERED: .125W  
 THICKNESS RECEIVED: .125W  
 SHEET SIZE ORDERED: N/A  
 SHEET SIZE RECEIVED: N/A

DESCRIPTION	NCR (Check Y/N)	COMMENTS
SURFACE DAMAGE	Y (N)	
CORRECT FINISH	(Y) N	
CORROSION	Y (N)	
CORRECT GRAIN DIRECTION	(Y) N	
CORRECT MATERIAL PER M-DRAWING	(Y) N	<u>AMS-QQ-A-200/8</u>
CORRECT THICKNESS	(Y) N	
PHOTO REQUIRED	Y (N)	
CORRECT REF # TO LINK CERT	(Y) N	<u>Heat # 51511059</u>
CORRECT MATERIAL IDENTIFICATION	(Y) N	
CORRECT M# ON THE MATERIAL	(Y) N	
DOES THIS MATERIAL REQUIRE ENGINEERING SIGN OFF	Y (N)	
DOES THIS REQUIRE AN EXTRUSION REPORT	Y (N)	

CUT SAMPLE PIECE OF MATERIAL AND PREFORM A HARDNESS CHECK.  
 RECORD RESULTS BELOW

	HRC	HRB	DUR A	DUR D	WEBSTER
TYPE OF MATERIAL					
SIZE OF TEST SAMPLE					
HARDNESS / DUROMETER READING					

testers located in the Quality Office

QC 18 INSPECTION		ENGINEERING SIGNOFF (if required)	
INSPECTED BY: <u>DAS</u> <u>11</u>	SIGNED OFF BY: _____		
DATE: <u>9-89 FEB 22 2018</u>	DATE: _____		

Attach this inspection sheet with the corresponding material cert and remit to be scanned and received in

PURCHASE MATERIAL: 6061-T6/T62/T6510/T6511 SEAMLESS TUBING

SPECIFICATION:

WQ-I-700/8  
OR QQ-A-200/8 OR QQ-A-225/8  
OR AMS 4082 OR AMS 4083  
OR ASTM B210 OR ASTM B241

PART NUMBER:

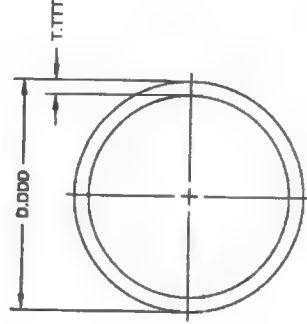
M6061T6T6D.DDD|W|T.TTT  
OD | WALL

WHERE "D.DDD" = OD IN INCHES  
"T.TTT" = WALL THICKNESS

EG. 3/8" OD X 0.058 WALL = M6061T6T6D.375W0.058

MATERIAL TOLERANCE:

PER ANSI H35.2



RELEASED  
2013-07-02

C	COMPLETE REFORMAT, ADDED T6510 & T6511. ADDED AMS 4083, ASTM B210 & ASTM B241 ADDED MATERIAL TOLERANCE	AJS	13.06.12
B	ADD QQ-A-200/8 & QQ-A-225/8	CP	04.01.23
A	NEW ISSUE	DS	01.08.21
REV.	DESCRIPTION	BY	DATE
DESIGN	AJS		
DRAWN	AJS		
CHECKED	W		
MFG. APPR.	M6061T6T		
APPROVED			
DE APPR.			
DATE	13.06.12		
DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA		REV. C	
DRAWING NO.		SHEET 1 OF 1	
TITLE		SCALE	
8061-T6 TUBING		NTS	
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# KAISER ALUMINUM

FABRICATED PRODUCTS

## CERTIFIED TEST REPORT

<http://Online.KaiserAluminum.com>

KAISER ALUMINUM  
FABRICATED PRODUCTS, LLC  
2425 STEVENS DRIVE  
RICHLAND, WA 99352

CUSTOMER PO NUMBER <b>M49377288-1</b>		CUSTOMER PART NUMBER <b>45542</b>		PRODUCT DESCRIPTION <b>5.0000 OD X 0.1250 WALL ESRT</b>	
KAISER ORDER NUMBER: <b>322346</b>	LINE ITEM: <b>001</b>	SHIP DATE: <b>10/06/2017</b>	KAISER LOT NUMBER: <b>51511-059</b>	ALLOY: <b>6061</b>	TEMPER: <b>T6511</b>
WEIGHT SHIPPED: <b>1134.000 LB</b>	QUANTITY: <b>21.000 PCS</b>	B/L NUMBER: <b>005489</b>	DIAM/DAF/THKNS: <b>5.0000</b>	WIDTH: <b>0.1250</b>	LENGTH: <b>24.000 FT</b>
SHIP TO:  <b>TW METALS INC 10404 GRANITE ST, BLDG O CHARLOTTE, NC 28241-0423 USA</b>			SOLD TO:  <b>TW METALS INC THE ARBORETUM 760 CONSTITUTION AVENUE EXTON, PA 19341 USA</b>		

### Actual Physical Properties

ACCEPTED BY

REFERENCE	DASH#	SAMPLE#	UTS (KSI)	YTS (KSI)	%Elong in 2	HARDNESS	CONDUCT.	BEND
51511-059	0001	0002	46.2	43.5	11.1	N/A	N/A	N/A

### Chemical Composition (wt%), Aluminum Remainder

LIMITS	Si	Fe	Cu	Mn	Mg	Cr	Zn	Ti	Pb	Bi	Zr	Ea	Tot
Maximum	0.80	0.70	0.40	0.15	1.20	0.35	0.25	0.15	NA	NA	NA	0.05	.15
Minimum	0.40	0.00	0.15	0.00	0.80	0.04	0.00	0.00	NA	NA	NA	0.00	.0
A20576	.60	.28	.23	.05	.99	.10	.05	.03	.00	.00	.00	.01	.02
038990	.61	.29	.22	.06	1.00	.06	.01	.02	.00	.00	.00	.00	.00

### Applicable Requirements:

AMS-QQ-A-200/8A, TYPE 1 ASTM-B241-16 ASME-SB241 2015 SECT II Also conforms to EN 10204  
3.1 STENCIL WITH AMS-QQ-A-200/8 ASTM-B221-14

### Miscellaneous Notes

MANUFACTURED IN USA MELTED IN USA  
MERCURY IS NOT A NORMAL BACKGROUND ELEMENT IN ALUMINUM ALLOYS. NEITHER MERCURY NOR ANY OF ITS COMPOUNDS ARE UTILITZED BY KAISER ALUMINUM IN THE MANUFACTURE OF THIS MATERIAL. MATERIAL COMPLIES WITH FAR BAA (FAR 52.225-1, BUY AMERICAN ACT- SUPPLIES), DFARS BAA (DFARS 252.225-7001 BUY AMERICAN ACT & BAL OF PAYMENTS PROG), AND FAR TAA (FAR 52.225-5 TRADE AGREEMENTS).

Plant Serial: 00016930  
Kaiser Order Number: 322346  
Line Item: 001

49377288



# **KAISER ALUMINUM**

**FABRICATED PRODUCTS**

KAISER ALUMINUM  
FABRICATED PRODUCTS, LLC  
2425 STEVENS DRIVE  
RICHLAND, WA 99352

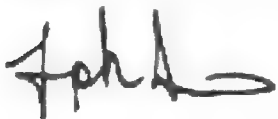
## **CERTIFIED TEST REPORT**

<http://Online.KaiserAluminum.com>

### **CERTIFICATION**

Kaiser Aluminum Fabricated Products, LLC hereby certifies that metal shipped under this order has been inspected and tested and found in conformance with applicable specifications forming a part of the description set forth in Kaiser's sales acknowledgement form. Any warranty is limited to that shown on Kaiser's general terms and conditions of sale. Test reports are on file, subject to examination.

JOSEPH AMES, QUALITY MANAGER



TW METALS

TEST

OCT 12 2017

REPORTS

ACCEPTED BY 

# MATERIAL RECEIPT INSPECTION FORM

MATERIAL: M606.16+1.0004.188  
 DATE: FEB 22 2018

PO / BATCH NO: C39038/5044669

MATERIAL CERT REC'D: Yes  
 QUANTITY RECEIVED: 24'  
 QUANTITY INSPECTED: 24'  
 QUANTITY REJECTED: 0

THICKNESS ORDERED: .188  
 THICKNESS RECEIVED: .188  
 SHEET SIZE ORDERED: N/A  
 SHEET SIZE RECEIVED: N/A

DESCRIPTION	NCR (Check Y/N)	COMMENTS
SURFACE DAMAGE	Y <input checked="" type="radio"/> N	
CORRECT FINISH	Y <input checked="" type="radio"/> N	
CORROSION	Y <input checked="" type="radio"/> N	
CORRECT GRAIN DIRECTION	Y <input checked="" type="radio"/> N	
CORRECT MATERIAL PER M-DRAWING	Y <input checked="" type="radio"/> N	Astm B2K
CORRECT THICKNESS	Y <input checked="" type="radio"/> N	
PHOTO REQUIRED	Y <input checked="" type="radio"/> N	
CORRECT REF # TO LINK CERT	Y <input checked="" type="radio"/> N	Heat # P002608730001
CORRECT MATERIAL IDENTIFICATION	Y <input checked="" type="radio"/> N	
CORRECT M# ON THE MATERIAL	Y <input checked="" type="radio"/> N	
DOES THIS MATERIAL REQUIRE ENGINEERING SIGN OFF	Y <input checked="" type="radio"/> N	
DOES THIS REQUIRE AN EXTRUSION REPORT	Y <input checked="" type="radio"/> N	

CUT SAMPLE PIECE OF MATERIAL AND PREFORM A HARDNESS CHECK. RECORD RESULTS BELOW					
TYPE OF MATERIAL	HRC	HRB	DUR A	DUR D	WEBSTER
SIZE OF TEST SAMPLE					
HARDNESS / DUROMETER READING					

testers located in the Quality Office

QC 18 INSPECTION		ENGINEERING SIGNOFF (if required)
INSPECTED BY: <u>DAS</u> <u>11</u> DATE: <u>9-89 FEB 22 2018</u>	SIGNED OFF BY: _____ DATE: _____	

Attach this inspection sheet with the corresponding material cert and remit to be scanned and received in

PURCHASE MATERIAL: 8081-T6/T62/T6510/T6511 SEAMLESS TUBING

SPECIFICATION:

WWT-7-700/8

OR QQ-A-200/8 OR QQ-A-225/8

OR AMS-4082 OR AMS 4082 OR AMS 4083

OR ASTM B210 OR ASTM B241

PART NUMBER

M6061T6T/D.DDD/HWT.TTT

OD WALL

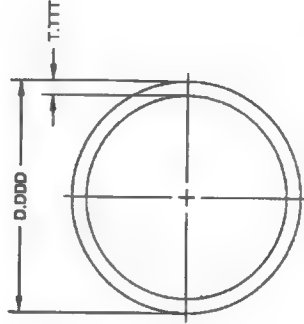
WHERE "D.DDD" = OD IN INCHES

"T.TTT" = WALL THICKNESS

EG. 3/8" OD X 0.058 WALL = M6061T6T0.375W0.058

MATERIAL TOLERANCE:

PER ANSI H35.2



RELEASED  
R 2013-07-02

C	COMPLETE REFORMAT, ADDED T6510 & T6511. ADDED AMS 4083, ASTM B210 & ASTM B241 ADDED MATERIAL TOLERANCE	AJS	13.06.12
B	ADD QQ-A-200/8 & QQ-A-225/8	CP	04.01.23
A	NEW ISSUE	DS	01.08.21
REV.	DESCRIPTION	BY	DATE
DESIGN		AJS	
DRAWN		AJS	
CHECKED			
MFG. APPR.			
APPROVED			
DE APPR.			
DATE	13.06.12		
DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA			
DRAWING NO. M6061T6T			
REV. C			
SHEET 1 OF 1			
TITLE 8081-T6 TUBING			
SCALE NTS			
DATE 13.06.12			
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# KAISER ALUMINUM FABRICATED PRODUCTS

KAISER ALUMINUM  
FABRICATED PRODUCTS, LLC  
6573 W. WILLIS ROAD  
CHANDLER, AZ 85226

## CERTIFIED TEST REPORT

<http://Online.KaiserAluminum.com>

CUSTOMER PO NUMBER: M49383412-1		CUSTOMER PART NUMBER: 43377		PRODUCT DESCRIPTION: Drawn Seamless Tube/Pipe	
KAISER ORDER NUMBER: 225209	LINE ITEM: 001	SHIP DATE: 01/31/2018		KAISER LOT NUMBER: F00260873	ALLOY: 6061
WEIGHT SHIPPED: 581.000 LB		QUANTITY: 86.000 PCS	B/L NUMBER: 228332	TEMPER: T6	
SHIP TO:  TW METALS INC 235 WEST TUBEWAY DRIVE CAROL STREAM, IL 60188 USA			SOLD TO:  TW METALS INC 760 CONSTITUTION DRIVE SUITE 204 EXTON, PA 19341 USA		

### Actual Physical Properties

REFERENCE	DASH#	SAMPLE#	UTS (KSI)	YTS (KSI)	ELONG%	HARDNESS	CON%IACS	BEND
F00260873	0001	001N	48.0	42.8	22.0	N/A	N/A	N/A
F00260873	0001	001S	48.3	44.0	22.0	N/A	N/A	N/A

### Chemical Composition (wt%), Aluminum Remainder

LIMITS	Si	Fe	Cu	Mn	Mg	Cr	Zn	Ti	Pb	Bi	Zr	Ea	Tot
Maximum	0.80	0.70	0.40	0.15	1.20	0.35	0.25	0.15	NA	NA	NA	0.05	0.15
Minimum	0.40	0.00	0.15	0.00	0.80	0.04	0.00	0.00	NA	NA	NA	0.00	0.00
D20780	.57	.32	.22	.02	.93	.06	.03	.02	.00	.00	.00	.01	.02

### Applicable Requirements:

Description: OD: 1.0000"; Wall: 0.1880"; Round @  
AMS4082P AMS-WW-T-700/6C ASTM B210-12 WW-T-700/6F  
WE TAKE EXCEPTION TO PARA. 5.2.1., Per AMS4082P, WAS NOT OILED.  
This Product Complies to FAR BAA, DFARS BAA, FAR TAA  
COMPLIES TO DIN EN 10204 JAN 2005  
No Weld Repair. Mercury Free.



### Miscellaneous Notes

MANUFACTURED IN USA MELTED IN USA  
MATERIAL COMPLIES WITH FAR BAA (FAR 52.225-1, BUY AMERICAN ACT- SUPPLIES), DFARS BAA  
(DFARS 252.225-7001 BUY AMERICAN ACT & BAL OF PAYMENTS PROG), AND FAR TAA (FAR 52.225-5  
TRADE AGREEMENTS).

Plant Serial: 00027304  
Kaiser Order Number: 225209  
Line Item: 001

**KAISER**  
**ALUMINUM**  
**FABRICATED PRODUCTS**

KAISER ALUMINUM  
FABRICATED PRODUCTS, LLC  
6573 W. WILLIS ROAD  
CHANDLER, AZ 85226

**CERTIFIED TEST REPORT**  
<http://Online.KaiserAluminum.com>

**CERTIFICATION**

Kaiser Aluminum Fabricated Products, LLC ('Kaiser') hereby certifies that metal shipped under this order has been inspected and tested and found in conformance with the applicable specifications forming a part of the description set forth in Kaiser's sales acknowledgement form. Any warranty is limited to that shown on Kaiser's general terms & conditions of sale. Test reports are on file subject to examination.

Hans Kattentidt, Quality Manager



Plant Serial: 00027304  
Kaiser Order Number: 225209  
Line Item: 001

1101

# MATERIAL RECEIPT INSPECTION FORM

MATERIAL: M304TPO.750W-049

PO / BATCH NO.: 039038/5044568

DATE: FEB 16 2018

MATERIAL CERT REC'D: YES

THICKNESS ORDERED: W.049

QUANTITY RECEIVED: 120

THICKNESS RECEIVED: W.049

QUANTITY INSPECTED: 120

SHEET SIZE ORDERED: N/A

QUANTITY REJECTED: 0

SHEET SIZE RECEIVED: N/A

DESCRIPTION	NCR (Check Y/N)		COMMENTS
SURFACE DAMAGE	Y	(N)	
CORRECT FINISH	(Y)	N	
CORROSION	Y	(N)	
CORRECT GRAIN DIRECTION	(Y)	N	
CORRECT MATERIAL PER M-DRAWING	(Y)	N	<u>Astms A213</u>
CORRECT THICKNESS	(Y)	N	
PHOTO REQUIRED	Y	(N)	
CORRECT REF # TO LINK CERT	(Y)	N	<u>Heat # YX1508708</u>
CORRECT MATERIAL IDENTIFICATION	(Y)	N	
CORRECT M# ON THE MATERIAL	(Y)	N	
DOES THIS MATERIAL REQUIRE ENGINEERING SIGN OFF	Y	(N)	
DOES THIS REQUIRE AN EXTRUSION REPORT	Y	(N)	

CUT SAMPLE PIECE OF MATERIAL AND PREFORM A HARDNESS CHECK. RECORD RESULTS BELOW					
	HRC	HRB	DUR A	DUR D	WEBSTER
TYPE OF MATERIAL					
SIZE OF TEST SAMPLE					
HARDNESS / DUROMETER READING					

testers located in the Quality Office

QC 18 INSPECTION		ENGINEERING SIGNOFF (if required)	
INSPECTED BY: <u>DAS 11</u>		SIGNED OFF BY: _____	
DATE: <u>9-80 FEB 16 2018</u>		DATE: _____	

Attach this inspection sheet with the corresponding material cert and remit to be scanned and received in

# SPECIFICATION CONTROL DRAWING

PURCHASE MATERIAL: AISI 304/316 SS SEAMLESS ROUND TUBING  
 SPECIFICATION: ASTM A213 OR ASME SA213 OR ASTM A269

WALL THICKNESS TOLERANCE PER ASTM A269 AS FOLLOWS:

OD (IN)	PERMISSIBLE OD TOL. (IN)	PERMISSIBLE WALL TOL.
UP TO 1/2	±0.005	±15%
1/2 TO 1 1/2, EXCL.	±0.005	±10%
1 1/2 TO 3 1/4, EXCL.	±0.010	±10%
3 1/4 TO 5 1/2, EXCL.	±0.015	±10%
5 1/2 TO 8, EXCL.	±0.030	±10%

PART NUMBER:

M304TR/D.DDD/W.TTT  
 OD | WALL

WHERE "D.DDD" = OUTSIDE DIAMETER IN INCHES  
 AND "TTT" = WALL THICKNESS IN INCHES

EG. 0.375" OD X 0.065" WALL TUBING = M304TR0.375W.065

RELEASED  
 08/10/20

B		REFORMAT DWG. ADD SPECS (2N DB-1).		CP	08.10.20
A		NEW ISSUE		DS	01.06.08
REV	DESCRIPTION	BY	DATE		
DESIGN					
DRAWN					
CHECKED					
MFG. APPR.					
APPROVED					
DE APPR.					
DATE	08.10.20				
DART AEROSPACE LTD HAWKESBURY, ONTARIO CANADA DRAWING NO. M304TR TITLE 304/316 ROUND TUBING REV. B SHEET 1 OF 1 SCALE NTS COPYRIGHT © 2001 BY DART AEROSPACE LTD. THIS DOCUMENT IS THE PROPERTY OF DART AEROSPACE LTD. AND IS NOT TO BE REPRODUCED OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, ELECTRONIC OR MECHANICAL, WITHOUT PERMISSION IN WRITING.					